

## CHRISTINA RIVER BASIN

01479678 UNNAMED TRIBUTARY TO WEST BRANCH RED CLAY CREEK AT KENNETT SQUARE, PA  
(New Garden Township, Chester County, Spray Irrigation Project)

**LOCATION.**--Lat 39°50'56", long 75°43'41", Chester County, Hydrologic unit 02040205, on right bank 600 ft upstream of confluence with West Branch Red Clay Creek, downstream of pond (station 01479677), at Kennett Square Borough.

**DRAINAGE AREA.**--0.07 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

**PERIOD OF RECORD.**--April 1998 to current year.

**GAGE.**--Water-stage recorder. Elevation of gage is 302.30 ft above sea level, from Global Positioning System.

**REMARKS.**--Records poor. Monthly water-quality samples were collected during the year. Other data for this project presented in tables on pages 368-389 and 447-484.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.049	.047	.036	e.021	.045	.040	.049	.035	.047	.028	.047	.023
2	.049	.051	.035	e.008	.040	.039	.045	.032	.040	.027	.045	.035
3	.045	.051	.029	e.011	.035	.038	.045	.032	.030	.028	.046	.030
4	.051	.051	.026	e.015	.035	.045	.044	.035	.030	.025	.047	.076
5	.059	.051	.022	e.017	.747	.048	.044	.030	.030	.030	.045	.032
6	.062	.051	e.021	e.018	.101	.044	.042	.030	.029	.026	.049	.021
7	.051	.051	e.020	e.019	.131	.040	.041	.030	.030	.024	.047	.025
8	.051	.051	e.023	e.014	.073	.040	.040	.030	.028	.021	.045	.029
9	.052	.052	e.024	e.009	.052	.041	.041	.033	.030	.030	.043	.030
10	.057	.084	e.024	e.011	.048	.040	.041	.037	.027	.537	.070	.030
11	.056	.051	e.024	e.015	.041	.037	.048	.032	.159	.042	.093	.028
12	.053	.051	e.027	e.014	.040	.036	.046	.034	.154	.035	.130	.027
13	.057	.051	e.034	e.011	.037	.095	.040	.038	.059	.026	.043	.027
14	.055	.056	e.300	e.011	.037	.043	.040	.040	.053	.026	.027	.036
15	.051	.044	.052	e.008	.040	.041	.042	.035	.056	.025	.029	.032
16	.053	.040	.056	e.018	.052	.058	.050	.034	.680	.022	.020	.030
17	.060	.040	2.6	e.021	.050	.053	.042	.029	.376	.024	.024	.027
18	.095	.040	.142	e.018	.040	.043	.042	.026	.251	.031	.027	.027
19	.099	.040	e.030	e.620	.038	.040	.040	.029	.169	.037	.026	.027
20	.094	.039	e.018	e.240	.035	.040	.040	.027	.202	.028	.029	.254
21	.134	.040	e.025	e.070	.033	.263	.040	.047	.170	.028	.024	.078
22	.152	.040	e.017	.045	.030	.069	.038	.041	.157	.040	.024	.039
23	.062	.040	e.017	.042	.032	.046	.036	.035	.153	.045	.025	.030
24	.045	.037	e.017	.038	.030	.046	.036	.030	.085	.045	.026	.050
25	.045	.035	e.017	e.036	.037	.041	.039	.030	.069	.049	.023	.098
26	.045	.145	e.009	e.034	.046	.036	.039	.113	.045	.049	.024	.043
27	.045	.047	e.009	.037	.040	.040	.040	.093	.035	.045	.022	.039
28	.045	.042	e.009	.035	.040	.040	.042	.032	.031	.045	.022	.035
29	.045	.037	e.018	.035	---	.050	.032	.028	.029	.047	.022	.036
30	.045	.040	e.018	1.3	---	.575	.032	.028	.032	.054	.023	.035
31	.045	---	e.018	.064	---	.061	---	.024	---	.050	.027	---
TOTAL	1.907	1.495	3.717	2.855	2.005	2.168	1.236	1.149	3.286	1.569	1.194	1.329
MEAN	.062	.050	.12	.092	.072	.070	.041	.037	.11	.051	.039	.044
MAX	.152	.145	2.6	1.3	.747	.575	.050	.113	.680	.537	.130	.254
MIN	.045	.035	.009	.008	.030	.036	.032	.024	.027	.021	.020	.021
CFSM	.88	.71	1.71	1.32	1.02	1.00	.59	.53	1.56	.72	.55	.63
IN.	1.01	.79	1.98	1.52	1.07	1.15	.66	.61	1.75	.83	.63	.71

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2001, BY WATER YEAR (WY)

	1998	1999	2000	2001	1998	1999	2000	2001	1998	1999	2000	2001
MEAN	.043	.038	.070	.076	.084	.10	.076	.045	.062	.041	.034	.088
MAX	.062	.055	.12	.092	.090	.14	.12	.096	.11	.090	.077	.22
(WY)	2001	2000	2001	2001	1999	2000	2000	2000	2001	2000	2000	1999
MIN	.012	.009	.013	.054	.072	.070	.041	.019	.020	.010	.009	.008
(WY)	1999	1999	1999	2000	2001	2001	2001	1999	1999	1999	1998	1998

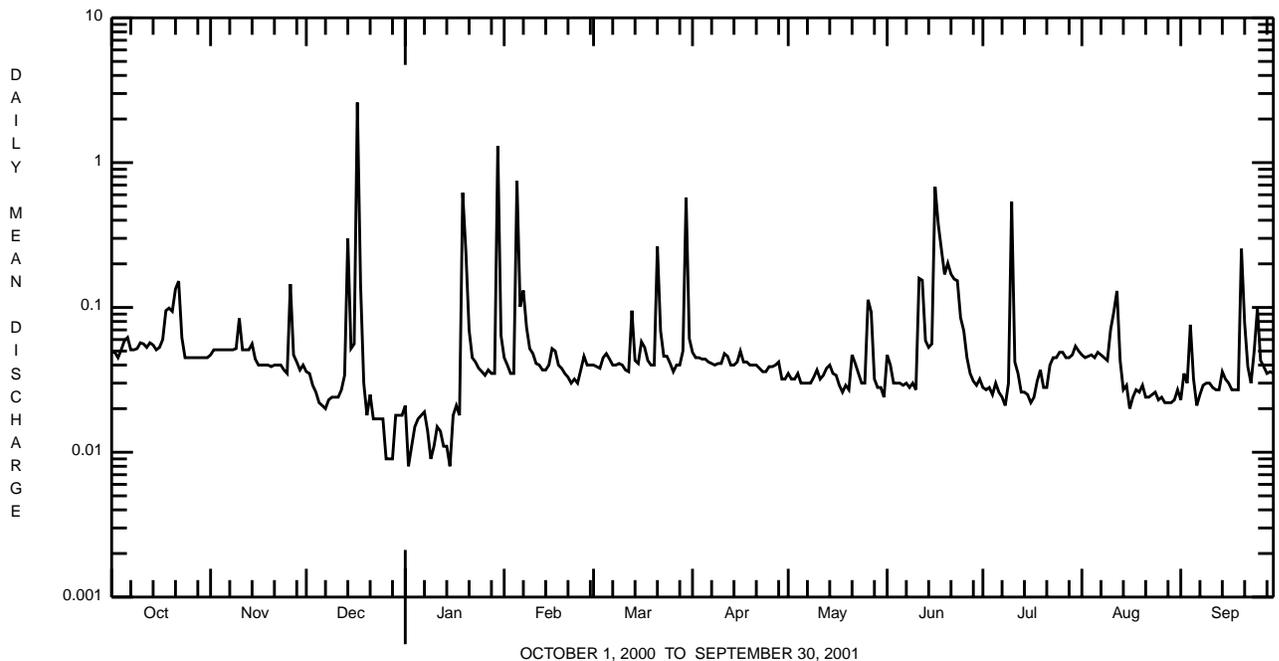
e Estimated.

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SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1998 - 2001	
ANNUAL TOTAL	32.345		23.910			
ANNUAL MEAN	.088		.066		.068	
HIGHEST ANNUAL MEAN					.085 2000	
LOWEST ANNUAL MEAN					.054 1999	
HIGHEST DAILY MEAN	2.6	Dec 17	2.6	Dec 17	e5.5	Sep 16 1999
LOWEST DAILY MEAN	a.009	Dec 26	a.008	Jan 2	c.000	Aug 5 1998
ANNUAL SEVEN-DAY MINIMUM	a.01	Dec 22	a.01	Jan 9	c.00	Jul 12 1999
MAXIMUM PEAK FLOW			21	Dec 17	27	Sep 16 1999
MAXIMUM PEAK STAGE			1.71	Dec 17	d1.82	Sep 16 1999
INSTANTANEOUS LOW FLOW			b.01	Jul 6	.00	Jul 19 1999
ANNUAL RUNOFF (CFSM)	1.26		.94		.98	
ANNUAL RUNOFF (INCHES)	17.19		12.71		13.27	
10 PERCENT EXCEEDS	.13		.08		.10	
50 PERCENT EXCEEDS	.06		.04		.04	
90 PERCENT EXCEEDS	.03		.02		.01	

- a Computed using estimated daily discharges.
- b Minimum recorded, but may have been less during period of ice effect.
- c First occurrence.
- d Maximum recorded.
- e Estimated.



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WATER-QUALITY RECORDS

REMARKS.--Some values for "dissolved" parameters exceed values for the corresponding "total" parameter. These results are within the limits of analytical precision and methods.

PERIOD OF RECORD.--May 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L) AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K) (00935)	SODIUM, DIS-SOLVED (MG/L) AS NA) (00930)	ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419)
OCT 2000												
24...	1000	9813	1028	9.9	7.2	429	11.5	--	--	--	--	72
NOV												
16...	1400	9813	1028	10.6	7.5	429	7.9	--	--	--	--	71
DEC												
13...	1300	9813	1028	5.6	7.3	423	3.3	50.9	13.1	3.65	9.3	68
JAN 2001												
23...	1100	9813	1028	14.0	6.7	346	1.7	--	--	--	--	61
FEB												
28...	1100	9813	1028	8.5	6.5	284	6.0	--	--	--	--	67
MAR												
29...	1300	9813	1028	6.9	7.4	378	8.2	43.4	10.6	3.00	7.5	68
MAY												
03...	1430	9813	1028	4.5	7.2	405	22.0	--	--	--	--	78
JUN												
04...	1600	9813	1028	4.5	7.5	392	18.0	--	--	--	--	95
28...	1000	9813	1028	3.4	7.3	375	23.8	53.7	10.0	6.64	8.1	87
JUL												
17...	1030	9813	1028	4.3	7.5	344	22.9	--	--	--	--	82
AUG												
30...	1000	9813	1028	6.4	7.5	409	23.2	--	--	--	--	100

DATE	BROMIDE DIS-SOLVED (MG/L) AS BR) (71870)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L) AS F) (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L) AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L) AS N) (00608)	NITRO-GEN, AMMONIA TOTAL SOLVED (MG/L) AS N) (00610)	NITRO-GEN DIS-SOLVED (MG/L) AS N) (00602)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L) AS N) (00618)
OCT 2000										
24...	--	--	--	--	--	--	<.020	<.02	8.2	8.00
NOV										
16...	--	--	--	--	--	--	<.020	<.02	9.2	9.20
DEC										
13...	<.20	35.9	<.2	14.0	38.7	288	<.020	<.02	10	10.9
JAN 2001										
23...	--	--	--	--	--	--	<.020	<.02	8.5	8.40
FEB										
28...	--	--	--	--	--	--	.030	.03	11	9.70
MAR										
29...	<.20	30.5	<.2	10.9	34.2	254	<.020	<.02	10	8.90
MAY										
03...	--	--	--	--	--	--	.040	.04	7.6	7.53
JUN										
04...	--	--	--	--	--	--	<.020	.02	7.1	6.37
28...	<.20	31.2	<.2	10.6	30.0	230	.030	.03	7.9	5.10
JUL										
17...	--	--	--	--	--	--	.040	.05	5.5	4.48
AUG										
30...	--	--	--	--	--	--	.030	.03	5.5	4.90

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## WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000 24...	<.040	8.3	.031	.032	.050	--	--	--	--	--
NOV 16...	<.040	9.7	.038	.035	.050	--	--	--	--	--
DEC 13...	<.040	10	.046	.045	.110	2.6	<200	20	25.0	<10
JAN 2001 23...	<.040	8.8	.079	.068	.120	--	--	--	--	--
FEB 28...	<.040	11	.018	.016	.040	--	--	--	--	--
MAR 29...	<.040	10	.012	<.010	.040	3.1	<200	<20	44.0	<10
MAY 03...	.090	7.9	.032	.026	.070	--	--	--	--	--
JUN 04...	<.040	6.9	.040	.025	.050	--	--	--	--	--
JUN 28...	<.040	7.2	.044	.055	.110	4.4	<200	50	71.0	<10
JUL 17...	.050	6.0	.046	.047	.090	--	--	--	--	--
AUG 30...	<.040	5.6	.042	.029	.043	--	--	--	--	--